

Chapter 6: Guidelines for Completing Usercost Package

6.1 Introduction

When creating a Usercost Package there are multiple items that need to be acknowledged that will affect the user during the life of the project. For instance, users can be affected by different situations such as construction duration, onsite/offsite realignment, need for ICTs, order of construction, liquidated damages, use of crossovers, accelerated construction, and time restrictions. With this there are certain guidelines and forms that should be completed to ensure that the usercost for the project isn't more than what can be accommodated.

6.2 Guidelines

GENERAL INFORMATION:

NOTE: OBTAIN ALL SUPPORTING INFORMATION BEFORE BEGINNING

The screenshot shows the 'User Costs' application window. At the top, there are three buttons: 'Run User Cost Report', 'Export to PDF', and 'RETURN TO CONTROL PANEL'. Below these, the form is divided into several sections. On the left, there are input fields for 'TIP#: B-3159', 'NC Project #:', 'Federal Aid #:', 'WBS Number: 38331', 'Division: 9', 'County: DAVIDSON', 'Let Date: 10/20/2015', 'Production Let', 'Group Leader: David Bissette, P.E.', 'Squad Leader: Mike Steelman', and 'Designer: Donnie Richardson'. In the center, there is a 'Description:' field with the text 'BRIDGE 27 OVER US 29-64-70/I-85 BUS LOOP ON US 52/NC 8'. Below this, there are fields for 'Project Type: Bridge', 'ADT: 25000', 'ADT Year: 2015', and 'ADT Source: Roadway title sheet'. On the right, there are fields for 'Project Duration (days): 780', 'Design Speed (mph): 40', 'Directional Split: 60', and '% Heavy Vehicles: 5'. At the bottom, there is a section for 'If Liquidated Damages were used on other projects within the same area or the same corridor, list TIP # and liquidated damages in the existing contract: <Ctrl+Enter for a new line>' and a section for 'Were hourly counts used?' with 'Yes' and 'No' radio buttons. The 'If No, Why Not?:' field contains the text 'NA'.

ADT/ADT Source:

- Use Average Daily Traffic, (ADT) volumes from the roadway title sheet if there are no hourly volumes available.

- Specify the source of your ADT: Roadway title sheet, Traffic Surveys Unit, Automatic Traffic Recorder locations, Division Traffic Counts, etc. (Make sure you include this information with your User Cost Package).

Note: Consult with Project Engineer before ordering counts.

Project Type:

- The **project type** aides in determining the volumes of vehicles per hour per lane, (vphpl) capacity numbers that are used to determine if time restrictions are required.
- If your **project description** does not match one of the program options, hand write in the proper description.
- The **description** should include information such as, urban; rural; light, moderate, or heavy roadside development, frequent signalized intersections, etc.

Project Duration:

- The Contract Time Engineer within the Proposals and Contract Management Section calculates the roadway construction times for your project. **DO NOT GUESS TIMES TO CONSTRUCT!** See your supervisor if you have questions.
- The Structures Engineer, calculates the structure construction times for your project. **DO NOT GUESS TIMES TO CONSTRUCT!** See your supervisor if you have questions.
- Be prepared to provide any needed information as necessary such as project phasing, roadway plans, etc. when discussing with either the Contract Time Engineer or Structures Engineer.

Hourly Counts:

Attach any hourly counts obtained to the user Cost Package. *Exception: Off-site Detours do not require hourly counts. The ADT shown on the roadway plan will suffice.*

Liquidated Damages on Corridor/Area Projects:

- Make a copy of all adjoining project's Intermediate Contract Time from their proposal and include this information with your UCOST package.
- If you're not sure whether or not your project qualifies, ask your supervisor for assistance.

User Cost Database:

DETOURS [If none, enter "N/A" in Description]					
Description	Road	Duration (days)	ADT	Daily User Cost	ProRated User Cost
► Y7 (Phase I, step 6)	Piedmont Dr	90	200	\$31.92	\$3.68
*					

A. DETOUR (ROAD CLOSURE)DESCRIPTION

- Please provide a description of the work operation requiring the detour.
- Provide the name of the road that is being detoured, (this is not referring to the project description).

ROAD

- Name of the Detoured Roadway.

DURATION (days)

- For off-site bridge projects (single structure), match the Contract Time (project duration) set by The Contract Time Engineer or Structures Engineer.
- For Intermediate Contract Times (ICT's), match the ICT recommended by the Division Construction Engineer, the Contract Time Engineer, or the Structures Engineer. **(Before contacting CTE or SE discuss the Intermediate Contract Time with the Division Construction Engineer or Resident Engineer).**

ADT

- Do not order counts for off-site detours. Use the ADT from the roadway plans or county map.
- Use ADT of the road that is being detoured.

DAILY USER COST

- Enter amount from the Detour User Cost Program.

PRORATED USER COST

- Program Calculates.

FLAGGING OPERATIONS [If none, enter "N/A" in Description]							
Description	Road	Highest Hourly Cost	Duration (days)	ADT	Daily User Cost	ProRated User Cost	
▶ 24 hr run	NC 8	\$1,409.01	0	25000	\$12,458.76	\$0.00	
Restricted 7am to 9am and 4pm to 6pm (General note A)	NC 8	\$797.98	80	25000	\$5,325.63	\$546.22	

B. FLAGGING OPERATIONS: (TWO LANE, TWO-WAY LANE CLOSURES)

1. If time restrictions are NOT applicable, do the following:

DESCRIPTION

- The construction operation that is necessitating the flagging operation, (this is not referring to the project description).

ROAD

- The road name that the flagging operation is on.

HIGHEST HOURLY COST/DAILY USER COST

- This is taken from the flagger program 24 hour run output and entering the correct duration of time.

DURATION

- This number should be equal to the time required for completion of the specific work operation. Review the items of work to be completed and discuss with the Division Construction Engineer or Resident Engineer before reviewing with the Contract Time Engineer, or the Structures Engineer.
- Note: The total duration of ALL ROADS should match the number of hours/(8hrs/day X 2 flaggers) that were required in the final quantity estimate.

ADT

- Should match the Flagger Program ADT and should include BOTH directions.

DAILY USER COST

- Should match the Flagger Program.

PRORATED USER COST

- Program calculates.

2. *If time restrictions ARE applicable, 2 lines of input will be required as follows:*

DESCRIPTION (FOR BOTH LINES OF INPUT)

- The construction operation that is necessitating the flagging operation, (this is not referring to the project description).

ROAD (FOR BOTH LINES OF INPUT)

- The road name that the flagging operation is installed on.

HIGHEST HOURLY COST/DAILY USER COST (FIRST LINE)

- This is taken from the flagger program 24 hour run output. This is required to see a “worst case delay/cost scenario”. This is also used to determine Liquidated Damages per hour.

HIGHEST HOURLY COST/DAILY USER COST (SECOND LINE)

- This is taken from the flagger program that shows hours of time.

DURATION (FIRST LINE)

- Enter a “0” for the duration time.

DURATION (SECOND LINE)

- Enter the correct duration of time. (Note: The total duration of ALL ROADS should match the number of hours/(8hrs/day X 2 flaggers) that were required in the final quantity estimate.)
- This number should be equal to the time required for completion of the specific work operation. Review the items of work to be completed and discuss with the Division Construction Engineer or Resident Engineer before reviewing with the Contract Time Engineer or the Structures Engineer.

ADT

- Should match the Flagger Program ADT and should include BOTH directions.

DAILY USER COST

- Should match the Flagger Program.

PRORATED USER COST

- Program calculates.

LANE CLOSURES [If none, enter "N/A" in Description]							
Description	Road	Highest Hourly Cost	Duration (days)	ADT	Daily User Cost	ProRated User Cost	
▶ 24 hr run	I-85 Bus	\$349.00	0	27000	\$1,788.00	\$0.00	
Restricted 5am to 10pm	I-85 Bus	\$0.00	60	27000	\$0.00	\$0.00	

C. LANE CLOSURES

1. If time restrictions are NOT applicable, do the following:

DESCRIPTION

- The construction operation that is necessitating the lane closure, (this is not referring to the project description).

ROAD

- The road name that the lane closure is on.

HIGHEST HOURLY COST/DAILY USER COST

- This is taken from the Quewz program 24 hour run output and entering the correct duration of time.

DURATION

- This number should be equal to the time required for completion of the specific work operation. Review the items of work to be completed and discuss with the Division Construction Engineer or Resident Engineer before reviewing with the Contract Time Engineer, or the Structures Engineer.

ADT

- Should match the Quewz Program ADT and the highest direction should be used.

DAILY USER COST

- Should match the Quewz Program.

PRORATED USER COST

- Program calculates.

2. *If time restrictions ARE applicable, 2 lines of input will be required as follows:*

DESCRIPTION (FOR BOTH LINES OF INPUT)

- The construction operation that is necessitating the lane closure, (this is not referring to the project description).

ROAD (FOR BOTH LINES OF INPUT)

- The road name that the lane closure is installed on.

HIGHEST HOURLY COST/DAILY USER COST (FIRST LINE)

- This is taken from the Quewz program 24 hour run output. This is required to see a “worst case delay/cost scenario”. This is also used to determine Liquidated Damages per hour.

HIGHEST HOURLY COST/DAILY USER COST (SECOND LINE)

- This is taken from the quewz programs that show hours of time.

DURATION (FIRST LINE)

- Enter a “0” for the duration time.

DURATION (SECOND LINE)

- Enter the correct duration of time.
- This number should be equal to the time required for completion of the specific work operation. Review the items of work to be completed and discuss with the Division Construction Engineer or Resident Engineer before reviewing with the Contract Time Engineer, or the Structures Engineer .

ADT

- Should match the Quewz Program ADT and the highest direction should be used.

DAILY USER COST

- Should match the Quewz Program.

PRORATED USER COST

- Program calculates.

INTERMEDIATE CONTRACT TIMES					
Description	Operation Type:	Recommended by:	Why Recommended:	Liquidated Damages	
► NC 8 daily and holiday restrictions 7am to 9am and 4pm to 6pm	Lane Closure	WZTC	Peak hour traffic volumes	\$0.00	
I-85 Bus cannot be closed from Monday at 5am thru Friday at 10pm, Saturday 5am to 10pm, Sunday 5am to 10pm	N/A	WZTC and Division	For all overhead work (proposed bridge, exist bridge)	\$0.00	

D. INTERMEDIATE CONTRACT TIME SUMMARY

NOTE: Every specified **ICT** included in the Transportation Management Plan will have the associated delay/cost that justifies the restriction. If the restriction cannot be justified by the delay/cost then the **ICT** will be recommended to be removed from the Transportation Management Plan unless safety concerns exist.

DESCRIPTION

- Always state road name (i.e.: I-95) and type of ICT (i.e.: day, time and holiday restriction) List the time, day & special event restrictions first.
- List other restrictions in the order as they appear in the project phasing.
- Include all ICTs that are in the TMP.
- ICTs should be separated per type needed and by road.

OPERATION TYPE

- List the construction operation that will be required to be performed in the ICT: detour, lane closure, flagging operation, etc.

RECOMMENDED BY:

- The WZTCS should always be recommending, sometimes in conjunction with one or more of the following: DTE, RTE, DCE, RCE

WHY RECOMMENDED:

- Description of Usercost implication.

NOTE: If during the evening hours with a low road capacity this is where you must use your engineering judgment and the capacity of the road verses the volume of the roads. It is also important to have a balance between the time restrictions and providing the contractor adequate time to get the work done. The more restrictive contract results in a longer duration and a higher cost.

E. USERCOST PACKAGE ASSEMBLY

Include the following in all Usercost Packages, in this order: & place in appropriate folder within the project store (server).

1. Usercost Summary or Report
2. ICTs
3. TMP General Notes
4. TMP Phasing Notes
5. Roadway Title Sheet
6. Detour Usercost (if applicable)
7. Detour Plan (one for each detour) (if applicable)
8. Flagging Operation Cost (if applicable)
9. Lane Closure Cost (if applicable)
10. Hourly Counts (if applicable)
11. Project Duration as established by the Contract Time Engineer.

Note: Please staple. Paper clips come off.

F. USER VALUE:

User value tries to place the “value” of having a facility completed and open to traffic. Typically, this type of analysis is performed on a corridor such as a Bypass project. Currently, we have no software that performs this analysis, but one can “extrapolate” a User Value with some known information and some “inferred” or “projected” assumptions. The most common way to address this request is to assume the road has been constructed and is open for traffic. Then assume it must be closed and the traffic detoured. Run a Detour User Cost to determine a User Cost for this situation. In some cases, the Lane Closure program may also be used to help determine this user value.